

CHAPTER 13 - CONSTRUCTION DOCUMENTS**1.0 General Formatting**

- 1.1 Policies and procedures contained in this chapter apply to restricted and unrestricted capital improvement projects.
- 1.2 Any deviation from any of the requirements in this chapter shall either be negotiated during the fee negotiation phase or requested and approved by DFM prior to commencing the work.
- 1.3 The project architect/engineer shall provide drawings on vellum (or Mylar®) and shall provide electronic drawings and specifications on CD / DVD in accordance with Chapter 17 - Electronic Document Submittals.
 - 1.3.1 Due to restrictions on the computer security system, DFM is not able to receive .ZIP files. Please send any review documents to DFM in .DOC, .DWG or .PDF file formats.
- 1.4 The project title shall be written in the following order: agency abbreviation, building name and a title of work. (Example: KDOT Horton Subarea Shop HVAC Upgrade.)

2.0 Final Drawing Requirements

- 2.1 The Construction Document Checklist FPDC Form 223 located on the website <http://da.ks.gov/fp/manual.htm> is to be used throughout the entire design and construction document phases of the project. These are intended to guide the design team to provide a complete set of construction documents.
- 2.2 The preferred size of drawing sheets for final drawings is 24" x 36". Drawings larger or smaller than 24" x 36" shall be approved by DFM prior to beginning the drawings.
- 2.3 Each sheet of the final drawings, including the cover sheet, will have a title block. The title block on the 24" x 36" sheet should be a minimum of 2" wide. The lower 12-inch section of the title block is reserved for the state's project information as shown on the graphic sample provided at the end of the Construction Document Checklist FPDC Form 223.
- 2.4 All drawings shall comply with the current United States National CAD Standard as published by the National Institute of Building Sciences. More information is available at <http://www.nationalcadstandard.org>.
- 2.5 All floor plans, including demolition, architectural, structural framing, mechanical and electrical plans shall be oriented the same direction, preferably oriented with a north arrow pointing to the top of the page, and shall have both a numeric scale and a graphic scale.
- 2.6 All building plans, i.e. architectural, reflected ceiling, roof, structural, mechanical, plumbing, electrical, lighting, fire suppression, of each floor shall be drawn to a scale of not less than one-eighth inch per foot. Floor plans of buildings less than 100 feet in length should be drawn at a scale of one-fourth inch per foot. Regardless of scale, all plans shall be the same scale, except for enlarged plans and details.
- 2.7 Each plan, detail and drawing shown on the documents shall be drawn accurately, and have the appropriate title and scale indicated.
- 2.8 If included in the project, alternates and unit prices shall be designated in whole numbers without subsets. (Example: Alt. 1, Alt. 2, Alt. 3, etc rather than Alt 1, Alt 1a, Alt 1b, etc). As accurately as possible, identify alternate work on plans and details for all disciplines.

- 2.9 The project architect/engineer shall efficiently use the drawing space on all drawing sheets leaving no white or blank spaces.
- 2.10 Each discipline shall provide a legend, using symbols and notations standard to the industry, indicating each symbol's meaning, and shall be located on the first sheet of each discipline's individual set of plans.
- 2.11 Locate and detail all fire-rated devices, dampers, assemblies, ceilings, walls, etc. to sufficiently explain fire-rating requirements shall be shown throughout the drawings. Each fire-rated assembly shall be identified by its Underwriters Laboratory (UL) design number or shall be an approved assembly by the IBC.

3.0 Final Specification Requirements

- 3.1 A current edition of a guide specification similar to Arcom's MasterSpec or BSD's SpecLink@ is required on all projects. All specifications shall follow the CSI Master Format section, numbering and outline formats for the 49 Division, 6-digit section number format.
- 3.2 The Specification cover, Documents A through I, and one section of Division 1 ("Front End") will be prepared by DFM. The project architect/engineer shall provide project data to DFM using the Specification Front End Data FPDC Form 305 located on the DFM website <http://da.ks.gov/fp/manual.htm>.
- 3.3 Final specifications created by the project architect/engineer shall be originals and shall include Division 1 sections not included in the above DFM section, and all technical specification sections.
 - 3.3.1 Do not insert blank pages at the end of each specification section or division. These pages will be removed before printing.
 - 3.3.2 If included in the project, alternates and unit prices shall be designated in whole numbers without subsets. (Example: Alt. 1, Alt. 2, Alt. 3, etc rather than Alt 1, Alt 1a, Alt 1b, etc). Reference specific drawings or specification sections.
 - 3.3.2.1 If two or more alternates are mutually exclusive, include language describing this condition in the alternate.
 - 3.3.2.2 On Document C - Form of Bid the alternate descriptions and unit price descriptions shall be titles summarizing the full description provided in Division 1.
 - 3.3.2.3 In the Division 1 section on Alternates, provide a complete narrative of each alternate to fully describe the scope of work and guide bidders to the appropriate specification sections and drawings.
 - 3.3.3 Division 1 sections provided by the project architect/engineer shall be coordinated by the project architect/engineer with the General Conditions, Supplemental General Conditions and Division 1 section as provided by DFM.
- 3.4 The first page following the specification cover will have the project title, DFM project number, agency name and each discipline's seal, signature and current date. As an option, each discipline may provide the required information on a separate page.
- 3.5 The project architect/engineer shall prepare and provide the Specification Table of Contents in both a paper copy and an electronic copy, by using the Table of Contents template available on

the website <http://da.ks.gov/fp/manual.htm> under planning forms. Format page numbers as shown on the template.

3.5.1 3.5.1 Table of Contents shall be prepared in .DOC / DOCX format.

3.6 DFM will determine if a specification will be in multiple volumes and will provide the cover sheet information for each volume.

3.6.1 A complete Table of Contents shall be provided at the front of each volume and shall indicate the contents of each volume.

3.7 Final specifications shall be printed on only one side of 8 1/2" x 11" white bond paper.

3.8 Final specifications shall be formatted to comply with the following to match the State of Kansas supplied sections:

3.8.1 Each page shall have a single column format with equal margins on both the right and left sides in order to facilitate two-sided copying.

3.8.2 Side margins shall be set at 3/4" maximum (conservation of paper).

3.8.3 Top and bottom margins shall be 1/2" minimum.

3.8.4 Use Arial or Helvetica Font 10 pt (these fonts use less toner than Times New Roman).

3.8.5 Each page shall have the DFM project number, spec section number and a page number.

3.9 Final specifications shall **NOT** be stapled or hole-punched.

3.10 Soils reports may be incorporated into the specifications at the end of the earthwork division as directed by DFM. If not incorporated, it will be made available to all plan holders by request.

3.11 All other documents, technical reports, legal descriptions, records and/or papers prepared by the design team for the project shall be sealed, signed and dated.

4.0 Document Review Requirements and Procedures

4.1 If needed, three in-progress reviews of the construction documents are required unless otherwise negotiated -- one review at 30% completion, one review at 60% completion and a final review. The following items should be provided in all review documents:

4.1.1 Request for Review Form at each phase.

4.1.2 Compliance with applicable codes, standards and laws listed in the firm's contract, and outlined in Chapter 7.

4.1.3 Coordination of structural, architectural, mechanical, plumbing, fire suppression/fire alarm and electrical designs and information.

4.1.4 Update of construction costs at each phase. If the project architect's or project engineer's construction estimate exceeds the agency's programmed construction budget approved at the initial fee negotiation, it is the responsibility of the agency to assist the firm in identifying options and means (including a decrease in scope, material selection, and/or alternates, etc.) to bring the firm's estimate within the programmed budget.

4.1.5 Update of project schedule.

5.0 30% Document Review Submittal

5.1 When the construction documents are 30% complete, in addition to the items in section 4.1, the project architect/engineer shall include the following items:

5.1.1 Compliance with applicable codes, standards and laws listed in the firm's contract, and outlined in Chapter 7.

5.1.1.1 5.1.1.1 In-progress (draft) or final code footprint.

5.1.2 Details showing construction of walls, doors and other components that are related to building code and accessibility standards.

5.1.3 Detail dimensions.

5.1.4 A roof plan showing roof slope, parapets, scuppers and roof drains as applicable to the project.

5.1.5 A structural plan for each level showing basic information as it relates to the structural components of the building.

5.1.6 Exterior elevations showing finish and existing grades.

5.1.7 Building sections, wall sections and critical details shall be identified.

5.1.8 Refinement of proposed building systems including sprinkler and fire alarm systems.

5.1.9 Preliminary finish schedule.

5.1.10 Provide outline specifications and material cut sheets to adequately describe equipment, materials and special requirements.

5.1.11 Edited specification sections appropriate to the project, including data on major materials, building systems and fire-resistive assemblies.

5.1.12 Verification of program budget.

6.0 60% Document Review Submittal

6.1 When the construction documents are 60% complete, in addition to the items in section 4.1, the project architect/engineer shall include the following items:

6.1.1 Compliance with applicable codes, standards and laws listed in the firm's contract, and outlined in Chapter 7.

~~6.1.1.1~~ 6.1.1.1 In-progress (draft) or final code footprint, dependent on 30% Document Review Submittal

6.1.2 Refinement of the architectural drawings, including preliminary door, window and finish schedules.

- 6.1.3 Refinement of specifications, including information on installation of major materials, building components and building systems including sprinkler and fire alarm systems.
- 6.1.4 Budget review and analysis containing detailed material and labor takeoffs all elements of the project such as structural, architectural, mechanical, plumbing, fire protection and electrical, etc.

7.0 Final Document Review Submittal

- 7.1 When the construction documents are 100% complete, in addition to the items in section 4.1, and the project architect/engineer has completed the following, the plans and specifications shall be submitted for **final review** as follows:
 - 7.1.1 Documents have been checked thoroughly by the project architect/engineer for compliance with all applicable building codes and accessibility laws, as outlined in Chapter 7.
 - 7.1.1.1 7.1.1.1 Final code foot print has been submitted for review and approved by DFM.
 - 7.1.2 Documents have been checked for completeness, accuracy, and coordination for all disciplines by the project architect/engineer in order to avoid any installation conflicts during construction.
- 7.2 Final **review** documents on bond. DO NOT SEND FINAL REVIEW DOCUMENTS ON VELLUM.
- 7.3 An estimate of all construction costs, alternates and estimate contingency to demonstrate the base bid is within the agency's programmed budget.
- 7.4 After final review comments have been provided to the project architect/engineer, the drawings and specifications (including all disciplines) shall be coordinated and corrected to ensure the bid documents are complete, accurate and comply with all applicable building codes, standards, laws and accessibility requirements.

8.0 Completion of the Construction Document Phase

- 8.1 Deliverables noted in this section are the same submittals required for electronic plan distribution. Plans and specifications will be submitted both electronically and on paper.
- 8.2 When the owner and DFM are satisfied that the project architect/engineer has met all the above requirements the following information shall be submitted to the DFM planner.
 - 8.2.1 An approved code footprint, signed by all parties is on file at DFM.
 - 8.2.2 Final bid drawings on vellum or Mylar®.
 - 8.2.3 All drawing sheets, including the cover sheet, shall have title blocks as described at the end of the Construction Document Checklist FPDC Form 223, and shall containing each discipline's seal, signed and dated across the seal.
 - 8.2.3.1 If drawings are completed on 11" x 17" paper, at DFM's option, they may be added to the back of the specification manual or printed as a separate document
 - 8.2.4 A full set of the technical specifications on 8 1/2" x 11" bond, single sided.

- 8.2.5 At least one 8 1/2" x 11" sheet with each discipline's seal, signed and dated across the seal.
- 8.2.6 An accurately prepared complete Table of Contents in .DOC / .DOCX format.
- 8.2.7 A completed Specification Front-End Data FPDC Form 305.
 - 8.2.7.1 During the bidding phase, if a project's funding source (i.e. federal funds) requires additional or unusual procedures beyond what the State of Kansas requires, the agency shall assist the project architect/engineer in identifying the specific procedures in an attachment to the Specification Front End Data FPDC Form 305.
- 8.2.8 A CD / DVD of electronic .PDF files of the drawings and specifications. Follow Chapter 17 – Electronic Document Submittals for guidelines for electronic drawing submittals.
- 8.3 When the agency and DFM concur that the above requirements are met, the Construction Document Phase is complete. The project will proceed into the bid phase (Chapter 14) at the direction of the agency.
- 8.4 The originals and CD / DVD of all documents (including addenda) will be archived at DFM.

9.0 END OF CHAPTER 13